

PRINTER RUSH
(PTO ASSISTANCE)

Application : 10/019022 ✓ Examiner : Silverman GAU : 1754

From: J. Black Location: ADC FMF FDC Date: 12/18/04

Tracking #: 08018942 Week Date: 10/41/04

DOC CODE	DOC DATE	MISCELLANEOUS
<input type="checkbox"/> 1449		<input type="checkbox"/> Continuing Data
<input type="checkbox"/> IDS		<input type="checkbox"/> Foreign Priority
<input type="checkbox"/> CLM		<input type="checkbox"/> Document Legibility
<input type="checkbox"/> IIFW		<input type="checkbox"/> Fees
<input type="checkbox"/> SRFW		<input type="checkbox"/> Other
<input type="checkbox"/> DRW		
<input type="checkbox"/> OATH		
<input type="checkbox"/> 312		
<input checked="" type="checkbox"/> SPEC	<u>Sp/12/02</u>	

[RUSH] MESSAGE:

Page 3, line 21 of specification mentions claim 10, but only 9 claims in application

Please resolve.

[XRUSH] RESPONSE: in page 3 line 21 "claim 10" has been changed to "claim 8"

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INITIALS:

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

The large gap in the middle of the particle size spectrum, comprising a particle size of about 4 to 20 μm , is normally covered via size reduction of the very large particles obtained in the crystallisation step of the Bayer process. Thereafter, mixtures of differing psd can be produced by mixing to achieve improved packing characteristics which lead to 5 lower viscosities in synthetic resins, and hence higher obtainable filling levels. However, grinding to an average particle size of less than 5 μm increasingly creates only crystalline debris with distorted surfaces.

A difficulty limiting the use of very fine crystals is their pronounced tendency to aggregate 10 and agglomerate during crystallisation. These effects are deleterious to good rheology in synthetic resins since they can increase viscosity levels dramatically. When mixed with coarser crystals to broaden the psd, they cannot be incorporated at levels which can exploit their fireproofing properties.

15 The object of the present invention therefore is to provide a process for the production of a fine crystalline aluminium hydroxide which does not give rise to the drawbacks outlined above and known from prior art.

This object could be achieved by the process of claim 1, the gibbsite type aluminium 20 hydroxide obtained by said process according to claim 7, and the synthetic resin filled with the respective aluminium hydroxide according to claim 16.

Surprisingly, it has been found that during particle size enlargement via crystal growth gibbsite crystals nucleated by bayerite seed retain their characteristic platy pseudo- 25 hexagonal crystal habit much longer than do fine crystals nucleated by gibbsite (highly active, finely ground seed).

Also standard crystallisation measures taken to further increase the size of the crystals, e. g., raising the temperature and/or reducing the seed charge increase the size of the crystals with surprisingly little aggregation and/or agglomeration, which is the normal 30 occurrence with gibbsite crystals.

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